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10/820,475	04/08/2004	Bryce N. Samson	NU-216	7575
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NUFERN			EXAMINER	
Peter J. Rainville			WOOD, KEVIN S	
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EAST GRANBY, CT 06026			PAPER NUMBER	
			2874	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

hsamson@nufern.com  
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**Office Action Summary**

Application No.

10/820,475

Applicant(s)

SAMSON ET AL.

Examiner

Kevin S. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 16-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/16/2006, 9/12/2006, 4/8/2004</u> .                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Election/Restrictions*

1. This action is responsive to the Response to Election/Restriction filed on 26 February 2007.
2. Applicant's election with traverse of Species I in the reply filed on 26 February 2007 is acknowledged. The traversal is on the ground(s) that not all the species are mutually exclusive of each other. This is not found persuasive because species are not required to be mutually exclusive in order for an election requirement to be proper.
3. The applicant makes an argument that claims 1-20, 22, 24—34 and 39-43 are all directed towards the elected Species I. The examiner respectfully disagrees. **Only claims 1-15 are directed toward the Species I.**

Claims 16-33 are not directed to the elected Species I. None of these claims include the limitation where outer region of the core comprises a first concentration of a selected rare earth that is greater than the concentration of the selected rare earth within the inner core region. Within the original specification the applicant has not disclosed or enabled any embodiment that includes both the photosensitivity and/or birefringence claimed within these claims and the outer core region having a higher concentration of a selected rare earth than does the inner core region

Claims 34-43 are not directed to elected Species I, in fact these claims are mutually exclusive because these claims are directed to the inner core region having a higher concentration of a selected rare earth than does the outer core region.

The requirement is still deemed proper and is therefore made FINAL.

4. **Claims 16-43 are withdrawn from further consideration** pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 26 February 2007.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not appear to disclose values or ranges for the concentrations of rare earth within the inner and outer core

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regions. It is unclear that the inventor(s) had possession of the claimed invention. The invention seems to be directed to an idea or concept that has not been formed into an actual device.

7. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not appear to enable one of ordinary skill in the art to produce an optical fiber having the claimed performance while including an outer core region having a higher concentration of a selected rare earth than the inner core region without an undue amount of experimentation. The only description of the rare earth concentrations are directed to the amount of rare earth in one region compared to another region. There has been no disclosure of actual concentration values or ranges that are workable to achieve the claimed performance. It would require a extensive experimentation for one of ordinary skill in the art to make and/or use this invention. Based on the specification, the amounts of rare earth could be substantially none or the amounts of rare earth could make up the entire regions, since no other materials or limits have been disclosed.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4 and 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,778,129 to Shukunami et al.

Referring to claims 1-4, 6, and 11, the Shukunami et al. reference discloses all the limitations of the claimed invention. The Shukunami et al. reference discloses an optical fiber, comprising: a core comprising an outer region (33) disposed about an inner region (35), the inner region comprising a first index of refraction and the outer region comprising a second index of refraction that is greater than the first index of refraction; a cladding disposed about the core (36); a second cladding (32) disposed about the cladding such that the cladding can guide light; wherein the outer region of the core comprises a first concentration of a selected rare earth (erbium) and wherein any concentration of the selected rare earth comprised by the inner region is less than the first concentration. See Fig. 11A and 11B of the Shukunami et al. reference along with their respective portions of the specification. The limitation where *the fiber further comprises a fundamental mode having an intensity profile at a first wavelength wherein the highest intensity of the intensity profile is no greater than 75% (or 60% or 50%) of the highest intensity of a Gaussian intensity profile normalized so as to have the same power as the intensity profile is a function or property being claimed within a device*

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claim. Where the claimed and prior art products are substantially identical in structure or composition, the properties or functions are presumed to be inherent. *See MPEP 2112.01*. The Shukunami et al. reference is presumed to have the claimed properties because it has a substantially identical structure to that of the claimed invention.

Referring to claims 7-10, the Shukunami et al. reference discloses all the limitations of the claimed invention. The Shukunami et al. reference discloses all the claimed structural limitations of these claims. All the limitations of claims 7-10 are directed towards function or property type limitations, not structural limitations. Where the claimed and prior art products are substantially identical in structure or composition, the properties or functions are presumed to be inherent. *See MPEP 2112.01*. The Shukunami et al. reference is presumed to have the claimed properties because it has a substantially identical structure to that of the claimed invention.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,778,129 to Shukunami et al. in view of U.S. Patent Application Publication 2006/0013545 to Varnham et al.

Referring to claims 12-15, the Shukunami et al. reference discloses all the claimed limitations except the reference does not appear to specifically disclose the fiber is birefringent with at least one longitudinally extending region for inducing stress. The Varnham et al. reference disclose an optical fiber amplifier similar to that taught by the Shukunami et al. reference. The Varnham et al. reference discloses a birefringent the use of longitudinally extending regions for inducing stress birefringence for the purpose of preferably configuring the optical fiber for single-polarization operation. See the entire Varnham et al. reference.

Since the Shukunami et al. reference and the Varnham et al. reference are both from the same field of endeavor, the purpose disclosed by the Varnham et al. reference would have been recognized in the pertinent art of the Shukunami et al. reference. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize the stress inducing regions for configuring the optical amplifying fiber for single-polarization operation by inducing stress birefringence.



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The stress inducing regions within the Varnham et al. reference are voids that have been filled with stress inducing material(s).

The Varnham et al. reference discloses that its teachings could be applied to microstructured optical fibers. See paragraph [0083] of the reference.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KSW

  
KEVIN WOOD  
PRIMARY PATENT EXAMINER